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New Circumstellar Dust Component in Oxyggen Rich Environments

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Abstract

Spectra of oxygen rich stars in the IRAS LRS catalog nave been found to display two distinct classes of circumstellar excess emission. The first group has the normal silicate with emission peaking at 10 and 18 microns. The second group has an emission spectrum peaking at 13 and 20 microns. There are also spectra with a mixture of the above types. Generally the continuum temperature associated with tne second group is much warmer than that associated with the normal silicate group. Laboratory spectra are compared with the new excess which associates the emission with a class of materials represented by hydrated aluminates and silicates. Possible interpretations include equilibrium condensation sequences and peculiar metal abundance ratios.